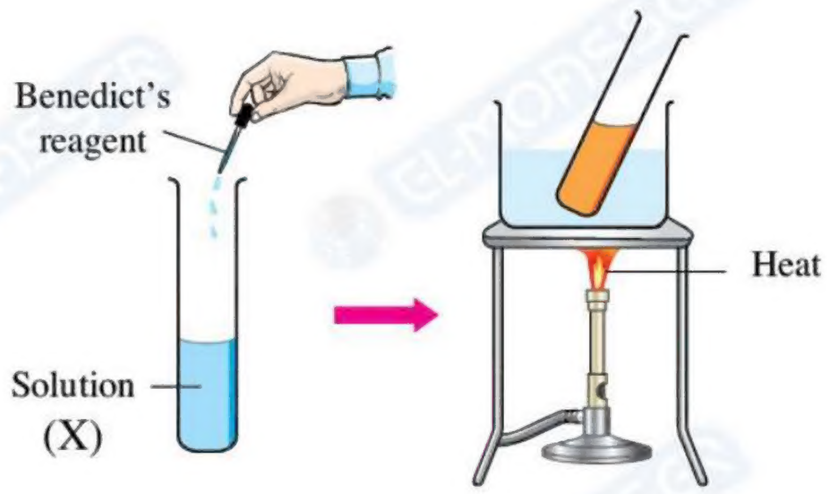
Test 1

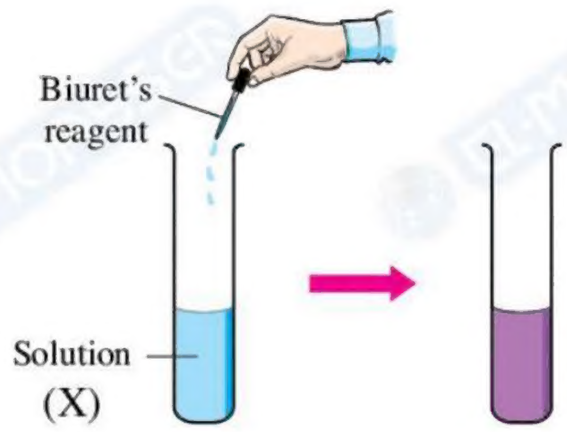
1 **Which of the following nitrogenous bases can't bind to a sugar with the structure formula $C_5H_{10}O_4$?**

(a) Uracil. (b) Thymine. (c) Adenine. (d) Cytosine.

2 **The following figures represent two tests carried out on solution (X) :**



Test (1)



Test (2)

Which of the following represent the organic substances that will be indicated in this solution ?

(a) Protein and starch. (b) Glucose and protein.

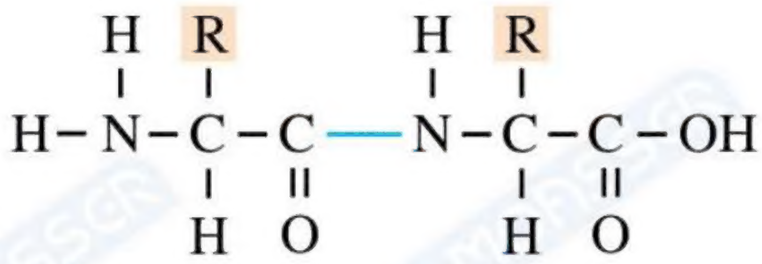
(c) Starch and fats. (d) Starch and glucose.

3 **What is the reason for the ability of wax covering the plant leaves to decrease the water loss ?**

(a) It contains monohydric alcohols. (b) It is from the organic compounds.

(c) It is from the biological macro-molecules. (d) It contains fatty acids.

4 **Which of the following statements is correct about the chemical compound shown in the opposite figure ?**



(a) It enters in the structure of chromosome.

(b) It gains energy easily inside the cell.

(c) It enters in the cell wall structure.

(d) It has a role in transporting the genetic material from parents to sons.

5 **Which of the following molecules vary in their chemical composition greatly ?**

(a) Simple sugars. (b) Lipids.

(c) Nucleic acids. (d) Carbohydrates.

6 **The general formula of carbohydrates is $(CH_2O)_n$ and the chemical formula of glucose is $C_6H_{12}O_6$, which of the following may refer to letter (n) ?**

(a) The number of hydrogen atoms that found in sugar.

(b) The number of carbon atoms that enter in the structure of sugar.

(c) The number of chemical bonds among the atoms of elements.

(d) The number of (OH) groups that linked to carbon atoms.

7 **Which of the following represents the correct arrangement for the components of a multicellular living organism from the simplest to the most complex ?**

(a) Cells – Polymers – Organelles – Tissues.

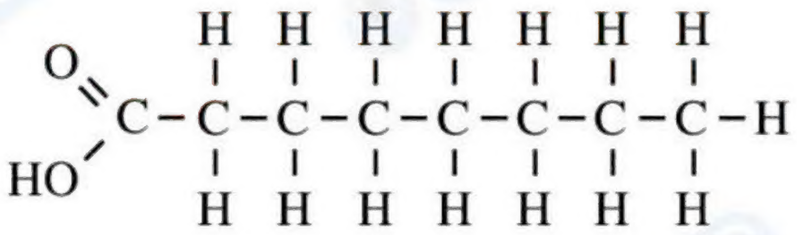
(b) Polymers – Cells – Organelles – Tissues.

(c) Organelles – Polymers – Cells – Tissues.

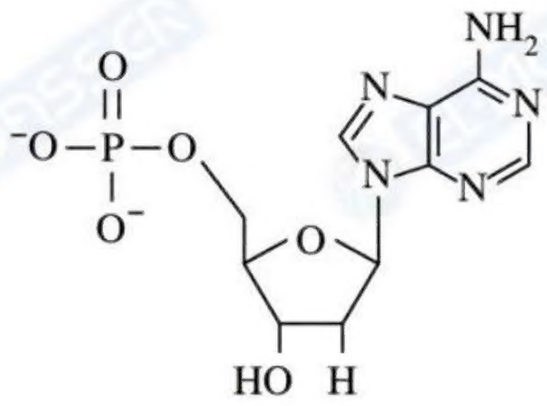
(d) Polymers – Organelles – Cells – Tissues.

8 **What is the relation between** iodine and thyroxine hormone ?

9 **What is the similarity between** compound (A) and compound (B) ?



Compound (A)



Compound (B)

10 **Explain :** The obese patients are adviced to decrease their intake from carbohydrates rich food.

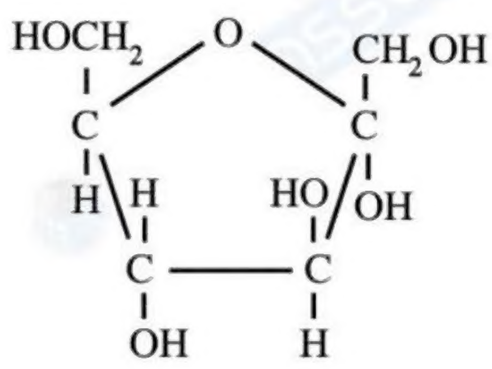
Test 2

1 The following figure illustrates the molecules of two different food substances before and after the digestion by enzymes :

Which of the following represents the products of digestion of fatty substance ?

(a) (X) and (Y). (b) (Y) and (Z). (c) (X) and (L). (d) (Z) and (L).

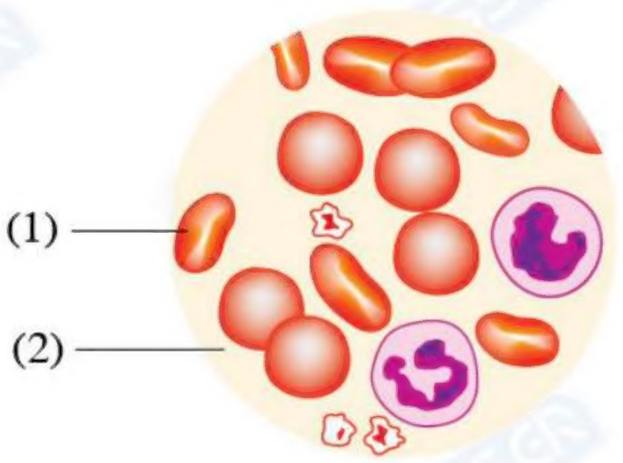
2 Which of the following represents the chemical compound in the opposite figure ?



(a) Amino acid. (b) Monosaccharide sugar.

(c) Disaccharide sugar. (d) Fatty acid.

3 The opposite figure illustrates a blood tissue in the human body, which of the following proteins are found in the structures (1) and (2) respectively ?



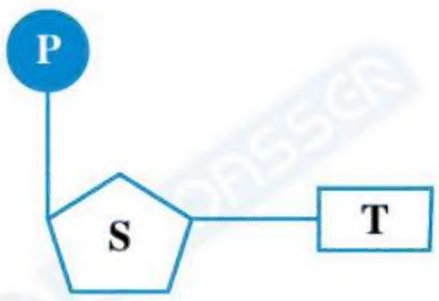
(a) Albumin / Haemoglobin.

(b) Albumin / Thyroxine.

(c) Chromatin / Thyroxine.

(d) Haemoglobin / Albumin.

4 The opposite figure illustrates a nucleotide in a nucleic acid. What is the chemical formula of the structure (S) ?



(a) $C_6H_{12}O_6$ (b) $C_5H_{10}O_4$

(c) $C_5H_{10}O_5$ (d) $C_{12}H_{22}O_{11}$

5 **The components of four different types of food were tested and the results recorded in the following table, which type of food contains monosaccharide, starch and protein respectively ?**

	Benedict's test	Iodine test	Biuret's test
(a)	Blue	Orange	Violet
(b)	Orange	Blue	Violet
(c)	Orange	Orange	Blue
(d)	Blue	Blue	Blue

6 **Which of the following is not considered a source of energy in the cell ?**

(a) Glucose. (b) Lactose. (c) Insulin. (d) Starch.

7 **Which of the following organic molecules contain free carboxyl groups on their hydrolysis ?**

(a) Polysaccharides only. (b) Proteins only.
(c) Phospholipids and polysaccharides. (d) Phospholipids and proteins.

8 **Calculate :** The number of peptide bonds in a polypeptide chain consists of 20 linked amino acids.

9 **Give reason for :** The conversion of oil from the liquid state to the solid state on adding hydrogen ?

10 **What are :** The elements that may be found in proteins and not found in carbohydrates ?

Answers of Biology

Answers of Test 1

1 (a) 2 (b) 3 (d) 4 (a)

5 (b) 6 (b) 7 (d)

8 Iodine element enters in the composition of thyroxine hormone which is secreted from thyroid gland.

9 Both of them are organic molecules that contain carbon, hydrogen and oxygen atoms.

10 Because it helps the body to obtain its energy from stored fats in the body, in order to get rid of excess fats.

Answers of Test 2

1 (d) 2 (b) 3 (d) 4 (b)

5 (b) 6 (c) 7 (b)

8 The number of peptide bonds = The number of amino acids – 1
= 20 – 1 = 19 peptide bonds.

9 Because the unsaturated fatty acids are converted into saturated fatty acids.

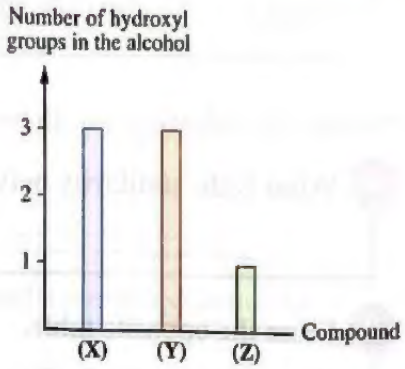
10 Iron, Iodine, Phosphorus.

Test 1 On The First Month

Choose the correct answer (1 : 7) :

1. Which of the following is applied to haemoglobin protein and casein protein respectively ?
   (a) Simple protein / Conjugated protein.
   (b) Conjugated protein / Simple protein.
   (c) Iron enters in its structure / Phosphorus enters in its structure.
   (d) It is called a nucleic protein / It is called a phosphoprotein.

2. The opposite graph represents the number of hydroxyl groups in the alcohols which enter in the structure of the organic compounds (X), (Y) and (Z), if you know that (Y) and (Z) have the same physical state, while (X) differs from them. Which of the following may contain compounds (X), (Y) and (Z) respectively ?



   (a) Cactus leaves / Condensed cream / Corn grains.
   (b) Sesame grains / Condensed cream / *Opuntia*.
   (c) Full-cream yoghurt / Corn grains / Cactus leaves.
   (d) Corn grains / *Opuntia* / Full-cream yoghurt.

3. Which of the following represents RNA molecule and glycogen molecule respectively ?
   (a) Thymine base enters in its structure / It is formed of fatty acids.
   (b) Ribose sugar enters in its structure / It is formed of repeated glucose units.
   (c) Deoxyribose sugar enters in its structure / It is formed of fructose units.
   (d) It enters in the structure of chromosomes / It enters in the structure of cell membranes.

4. Which of the following is from the similarities between steroids and cellulose ?
   (a) Both are complex sugars.
   (b) Both are derived lipids (lipids derivatives).
   (c) Both don't dissolve in water.
   (d) Both enter in the structure of plant cell walls.

5. Which of the following represents assymetrical disaccharide and is present in the plant cells?
   (a) Maltose. (b) Lactose. (c) Sucrose. (d) Glucose.

The opposite table shows the percentage of each of the proteins, lipids and carbohydrates in 4 different meals :

Meal	Proteins%	Lipids%	Carbohydrates%
(1)	76	9	15
(2)	17	0	83
(3)	33	32	35
(4)	15	83	2

6 Which meal of them has a greater chance to be stored in the liver ?

ⓐ (1). ⓑ (2). ⓒ (3). ⓓ (4).

7 From which meal of them the body makes greatly benefit in building its tissues ?

ⓐ (1). ⓑ (2). ⓒ (3). ⓓ (4).

Answer the following questions (8 : 10) :

8 **What is the similarity between :** glycine amino acid and DNA nucleic acid ?

9 **From the opposite table.**

If the two compounds (X) and (Y) are from the same kind of the biological macro-molecules, while compound (Z) differs from them :

Element / Compound	Oxygen	Phosphorus	Nitrogen
(X)	✓	✓	✓
(Y)	✓	–	✓
(Z)	✓	✓	✓

What does compound (Z) represent if it is :

(a) A monomer of one of the complex biological compounds ?

(b) A polymer which enters in the structure of the cell membrane ?

10 **What is the relation between :** iodine and thyroxine hormone ?

Test 2 On The First Month

Choose the correct answer (1 : 7) :

1. Which of the following molecules contain carbon atoms ?
   (a) Water. (b) Table salt. (c) Ammonia. (d) Glucose.

2. What is the least number of hydrogen atoms that share in monosaccharide formation ?
   (a) 4 (b) 6 (c) 8 (d) 10

3. Which of the following illustrates the similarity between the plant oil and the animal fat ?
   (a) Both are present in a liquid state.
   (b) Both are present in a solid state.
   (c) Both are from biological macro-molecules.
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4. Which of the following foodstuff represent a fast source and a postponed source for obtaining energy respectively ?
   (a) Pasta / Malt solution. (b) Butter / Rice.
   (c) Bread / Sugarcane juice. (d) Sugarcane juice / Butter.

5. Which of the following statements represents the correct arrangement for the relation between the nucleic acids and the appearance of genetic trait ?
   (a) Amino acids / Protein / RNA / DNA / Genetic trait.
   (b) Amino acids / Protein / DNA / RNA / Genetic trait.
   (c) DNA / RNA / Amino acids / Protein / Genetic trait.
   (d) RNA / DNA / Amino acids / Protein / Genetic trait.

6. On the formation of disaccharide and dipeptide; the secondary product is .....
   (a) H_2O (b) O_2 (c) CO_2 (d) N_2

7. The following diagram illustrates a plant complex sugar :

   What does this figure represent ?
   (a) Starch. (b) Glycogen. (c) Sucrose. (d) Lactose.

Answer the following questions (8 : 10) :

8 **What is the similarity between : galactose and lactose ?**

9 **What is the number of : free amino groups in a polypeptide chain that is formed of 15 amino acids ?**

10 **Study the two following figures, then determine the mistake in each of them.**

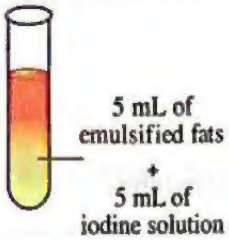

Figure (1)

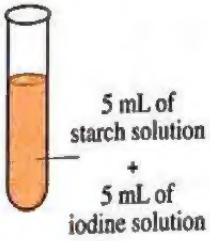

Figure (2)

EL-MOASSER

GPS
Interactive E-learning Application

BIOLOGY

By A Group Of Supervisors

Main Book

1st SEC.
2024
FIRST TERM

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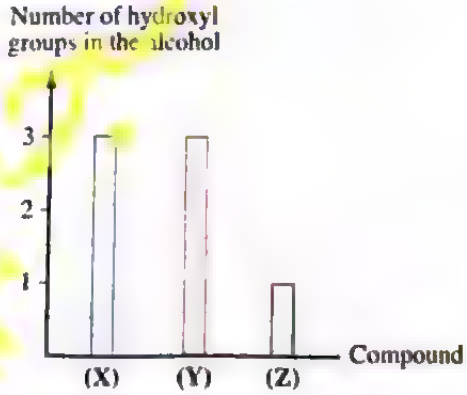

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(Y)	✓	–	✓
(Z)	✓	✓	✓

What does compound (Z) represent if it is :

(a) A monomer of one of the complex biological compounds ?

nucleotide

(b) A polymer which enters in the structure of the cell membrane ?

phospholipid

10 **What is the relation between :** iodine and thyroxine hormone ?

Thyroxine hormone (thyroid gland protein) is a conjugated protein that consists of amino acids linked with iodine

Test 2 — On The First Month

Choose the correct answer (1 : 7) :

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   (a) Water. (b) Table salt. (c) Ammonia. (d) Glucose.

2. What is the least number of hydrogen atoms that share in monosaccharide formation ?
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Number of free amino groups = 1

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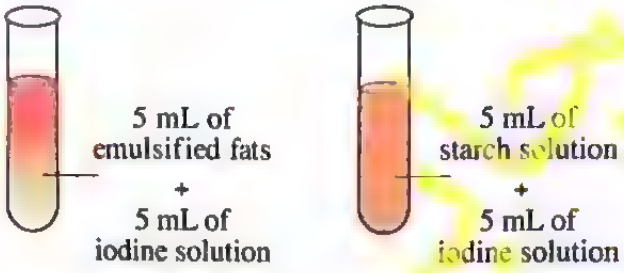


Figure (1) **Figure (2)**

The mistake in figure (1) iodine solution / Replacing the iodin solution with sudan 4 reagent .

→ The mistake in figure (2) orange colour of solution / Blue colour of solution .

Test on Chapter 1

Cell Theory

First Choose the correct answer (1 : 14)

1 Who is the founder scientist of the cell theory ?

(a) Robert Hooke. (b) Theodor schwann.

(c) Schleiden. (d) Virchow.

---

2 Light microscope with magnifying power equals (400x), if the magnifying power of its objective lens is (40x), therefore what is the magnifying power of its ocular lens ?

(a) (1x). (b) (10x).

(c) (100x). (d) (1000x).

---

3 Who is the first scientist who proved that the cell is the functional unit of the living organisms ?

(a) Robert Hooke. (b) Theodor Schwann.

(c) Schleiden. (d) Virchow.

---

4 Why Schleiden was considered to be the first scientist who clarified that the cell is the building unit ?

(a) He was the first who observed the microscopic organisms.

(b) He was the first who examined an animal tissue and found that it consists of cells.

(c) He was the first who examined a plant tissue and found that it consists of cells.

(d) He was the first who made a compound light microscope.

---

5 Who is the first scientist who could see the red blood cells by using a microscope ?

(a) Van Leeuwenhoek. (b) Robert Hooke.

(c) Schleiden. (d) Virchow.

---

6 Which of the following microscopes is used in studying the details of the external membrane surface of the mitochondrion in a muscular cell ?

(a) Simple microscope. (b) Light microscope.

(c) Scanning electron microscope. (d) Transmission electron microscope.

7 In bio-lab, a student observed some phenomena on carrying out an examination by using the compound microscope. Which one of these phenomena supports the cell theory ?

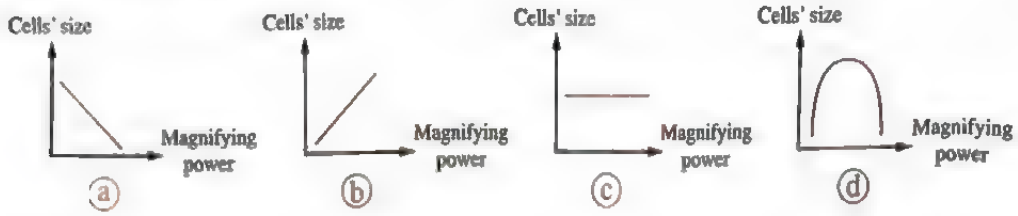
ⓐ Skeletal muscle fiber contains several nuclei.

ⓑ Mature red blood cells don't contain nuclei.

ⓒ New cells are formed from the cellular division.

ⓓ The cells of the endocrine glands tissue contain nuclei.

8 Which of the following graphs expresses the relation between the size of cells of a certain tissue in a leaf of the corn plant and the magnifying power of the light microscope lenses that are used in examination ?



9 When the magnifying power of the ocular lens for a light microscope is (30x), what is the magnifying power of the objective lens to obtain the maximum magnifying power for this microscope ?

ⓐ (10x). ⓑ (30x). ⓒ (50x). ⓓ (70x).

10 (1) The living organisms are originated spontaneously.

(2) All the living organisms consist of cells either single or grouped.

(3) The cell is the building and functional unit for all the living organisms.

Which one of the previous statements **doesn't/don't** support the cell theory ?

ⓐ (1)only. ⓑ (2) and (3). ⓒ (1) and (3). ⓓ (3) only.

11 Which of the following procedures **can't** be used on distinguishing among different types of white blood cells by using the compound microscope ?

ⓐ Using dyes.

ⓑ Changing the light intensity.

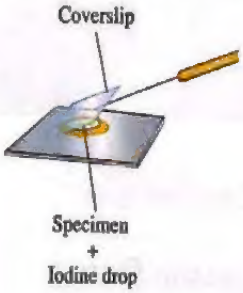
ⓒ Using the magnifying power of the microscope = 1000x

ⓓ Using the magnifying power of the microscope = 2500x

12 Which of the following represents the most suitable method to examine the micro-structure of the nucleus ?

(a) Magnifying lens.
(b) Light microscope.
(c) Scanning electron microscope.
(d) Transmission electron microscope.

13 The opposite figure illustrates the preparing method to examine a specimen of a plant tissue by the light microscope, why is the specimen covered by a coverslip with a certain angle as shown in the figure ?



(a) To see the specimen with its original size.
(b) To reduce the presence of air bubbles.
(c) To reduce the size of specimen.
(d) To be clearer and transparent.

14 How far are these statements "Cellulose fibers of the epidermal cell wall of onion plant can be seen by the light microscope", "Also, the chromosomes can be seen during the cellular division by the electron microscope only", correct ?

(a) The two statements are correct.
(b) The first statment is correct and the second statement is wrong.
(c) The first statement is wrong and the second statement is correct.
(d) The two statements are wrong.

Second Answer the following questions (15 , 16)

15 "All the living organisms consist of a group of cells that are attached to each other".
How far is this statement correct ? With explanation.

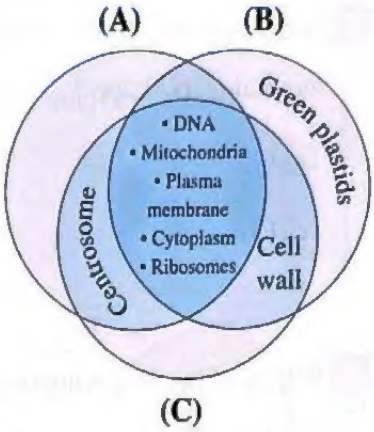
16 The cell theory was arisen, as a result of the efforts of three scientists, **mention the role of each scientist.**

Test on Chapter 2

Cell Ultrastructure

First Choose the correct answer (1 : 14)

The opposite figure represents three types of living cells, examine it, then answer :



1 What does cell (C) represent ?

ⓐ Animal cell. ⓑ Plant cell.

ⓒ Fungal cell. ⓓ Algal cell.

2 Which process of the following **can't** be performed by cell (A) ?

ⓐ Producing energy. ⓑ Protein synthesis.

ⓒ Performing photosynthesis process. ⓓ Cell division.

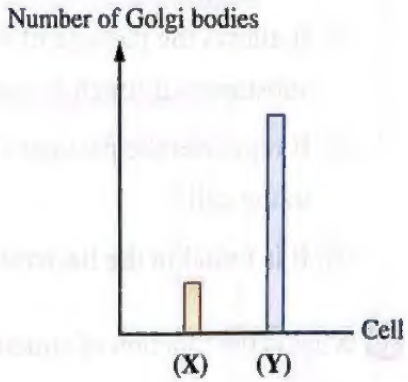
3 Which part of the plant belongs to cell (B) ?

ⓐ Coloured flower petal. ⓑ Sweet potato plant root.

ⓒ Rapeseed plant root. ⓓ Bean plant leaf.

---

4 The opposite graph represents the number of Golgi bodies in two cells (X) and (Y) in human body, what is the difference that may occur between cell (X) and cell (Y) ?



ⓐ The structure of the plasma membrane.

ⓑ The number of nucleoli.

ⓒ The presence of centrosome.

ⓓ The presence of mitochondria.

---

5 If you knew that estrogen hormone is from steroids, what is(are) the organelle(s) that is(are) responsible for synthesizing this hormone ?

ⓐ Mitochondria. ⓑ Smooth endoplasmic reticulum.

ⓒ Rough endoplasmic reticulum. ⓓ Ribosomes.

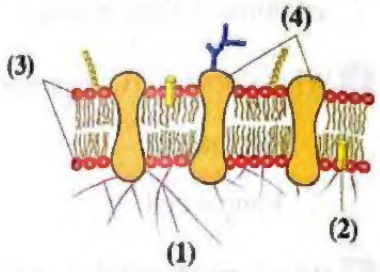
6 If you knew that the human body contains spleen that is responsible for getting rid of the senescent red blood cells. Which organelle do you expect to be found in abundance inside its cells ?

ⓐ Lysosomes. ⓑ Smooth endoplasmic reticulum.

ⓒ Mitochondria. ⓓ Centrosome.

---

7 In the opposite figure, which of the following structures supplies the cell with a support that maintains its shape ?



ⓐ (1). ⓑ (2).

ⓒ (3). ⓓ (4).

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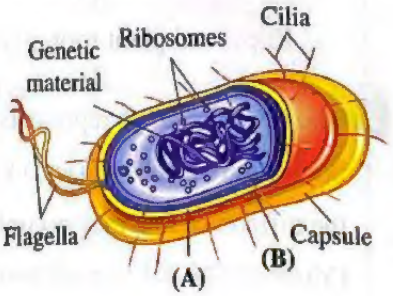
8 Which of the following organelles is/are the least affected by non-polar solvents ?

ⓐ Lysosomes. ⓑ Centrosome.

ⓒ Mitochondria. ⓓ Golgi bodies.

▸ The following figure represents a bacterial cell that lives in liquid media as water and milk, using the flagella illustrated in the figure for movement, study it, then answer :



9 What is the function of structure (A) ?

ⓐ It acts on supporting the bacterial cell.

ⓑ It allows the passage of water and dissolved substances through it easily.

ⓒ It regulates the passage of substances from and to the cell.

ⓓ It is found in the bacterial and plant cells only.

10 What is the function of structure (B) ?

ⓐ It acts on supporting the bacterial cell.

ⓑ It allows the passage of water and doesn't allow the passage of dissolved substances through it.

ⓒ It regulates the passage of substances from and to the cell.

ⓓ It exists in all the living cells.

11 Which of the following cells contains the largest amount of lysosomes ?

ⓐ Muscular cell. ⓑ Nerve cell.

ⓒ White blood cell. ⓓ Red blood cell.

12 Which of the following organelles occupies the greatest area in the plant cell ?

ⓐ Lysosome. ⓑ Sap vacuole.

ⓒ Golgi body. ⓓ Chloroplast.

13 Which of the following biological macro-molecules leave(s) the nucleus through the nuclear membrane pores ?

ⓐ DNA ⓑ Amino acids.

ⓒ RNA ⓓ Phospholipids.

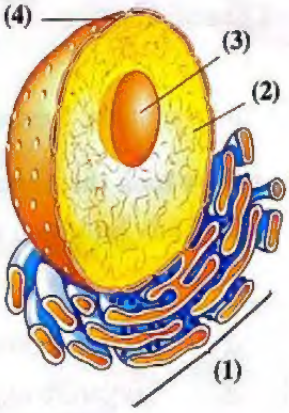
14 The opposite figure represents a part of the living cell, what is the part that is **not** considered from the components of the nucleus ?

ⓐ (1).

ⓑ (2).

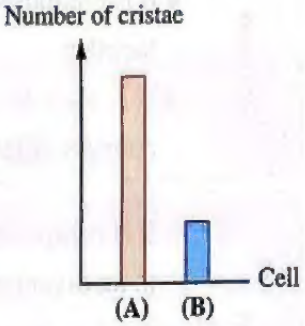
ⓒ (3).

ⓓ (4).



Second Answer the following questions (15 , 16)

15 The opposite graph illustrates two cells (A) and (B), **which of these cells has the ability to produce a larger amount of energy ? Explain your answer.**



16 "All the cells are surrounded by structures consisting of the same type of polymers". **How far is this statement correct ? With explanation.**